REMARKS

Applicants appreciate the detailed examination evidenced by the Office Action mailed August 10, 2006 (hereinafter "Office Action"), and more particularly, the indication that Claims 11, 13-14, 18, and 20-21 recite patentable subject matter and would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In the present amendment, Claims 1-9, 15, 16 and 22 are amended and Claims 1-28 are presently pending in the application. Applicants respectfully submit that all claims are in condition for allowance for at least the reasons stated below.

35 U.S.C. §112, first paragraph, rejections

The Office Action maintains the previous rejections of Claims 1-7 and 22-28 and makes new rejections of Claims 1, 4, and 15 under 35 U.S.C. §112, first paragraph. The Office Action suggests the language "computer implemented" for curing the alleged defects. In response, Applicants have amended Claims 1-7 and 15 to include the language suggested in the Office Action. Applicants respectfully submit that Claims 22-28 are computer program product claims and do not require clarifying language to be embodied in a computer implementation. If the 35 U.S.C. §112, first paragraph rejection is maintained for Claims 22-28, Applicants respectfully request additional clarification as to suggested corrective language. Applicants respectfully submit that all the rejections under 35 U.S.C. §112, first paragraph, are addressed and the rejections should be withdrawn.

Claims 1-10, 12, 15-17, 19, and 22-28 are patentable

The Office Action states that Claims 1-10, 12, 15-17, 19, and 22-28 are rejected under 35 U.S.C. §103(a) as being unpatentable over various combinations of U.S. Patent No. 6,714,242 to Kobayashi ("Kobayashi"), U.S. Patent No. 6,219,464 to Greggain et al. ("Greggain"), U.S. Patent No. 6,816,166 to Shimizu et al. ("Shimizu"), and U. S. Published Patent Application 2004/0086201 to Muresan et al. ("Muresan"). In response, Applicants have amended independent Claims 1, 8, 9, 15, 16, and 22 to include recitations not disclosed or suggested in any of the cited references.

The cited references, alone or in combination, do not disclose or suggest using a Lagrangian filter to perform any of the filtering or data manipulation in any step, block, apparatus or operation. Accordingly, Applicants have amended independent Claims 1, 8, 9, 15, 16, and 22 to include recitations that use Lagrangian filtering in various operations of the claimed inventions. For example, Claim 1, as amended, recites, in part:

> low-pass filtering the data surrounding the interpolation location *using Lagrangian filtering to determine a direction of interpolation* for the interpolation location;
> calculating pixel data values at points where a line, that passes through the interpolation location and extending in the direction of interpolation, intersects horizontal or vertical lines of the display, wherein the points are not included in the originally formatted input pixel data;
> filtering the pixel data values at the points, *using Lagrangian filtering, to provide an interpolated pixel value* at the location of interpolation; and
> providing the interpolated pixel value to the display to provide a scaled-up image thereon compared to the originally formatted input pixel data,

recitations which are not disclosed or suggested by the cited references. (*Emphasis added.*) For example, no combination of the cited references suggest, at least, "low-pass filtering…using Lagrangian filtering to determine a direction of interpolation." Applicants respectfully submit that current recitations to Lagrangian filtering are included in various forms in previously presented claims as an alternative to polyphase filtering and therefore the claim amendments herein do not necessarily provide grounds for a new search. In this regard, if new references are cited in a subsequent rejection, such rejection should be non-final.

Thus, Applicants respectfully submit that the recitations of:

> low-pass filtering the data surrounding the interpolation location *using Lagrangian filtering* to *determine a direction of interpolation* for the interpolation location;
> calculating pixel data values *at points where a line, that passes through the interpolation location* and extending in the direction of interpolation, intersects horizontal or vertical lines of the display, wherein the points are not included in the originally formatted input pixel data;
> filtering the pixel data values at the points, *using Lagrangian filtering*, to provide an interpolated pixel value at the location of interpolation

are not disclosed or suggested by the cited references. For at least these reasons, Claim 1 is allowable over the cited references.

Regarding independent Claims 8, 9, 15, 16 and 22, Applicants respectfully submit that each of these claims, as amended, recites the exclusive use of Lagrangian filters for at least one operation/step/structure therein. For example, independent Claim 9 recites, in part, "a scaling interpolator, which ...applies Lagrangian filtering to the calculated pixel data." Similarly, independent Claim 15 recites, in part, "applying Lagrangian filtering to the calculated pixel data on the extended line." Even a combination of all cited references, whether proper or not, does not disclose or suggest a Langrangian filter or the use thereof.

Accordingly, independent Claims 1, 8, 9, 15, 16 and 22 are patentable over any and all combinations of Kobayashi, Yimizu, Muresan, and Greggain for at least these reasons. Furthermore, dependent Claims 2-7, 10, 12, 17, 19 and 23-28 are patentable at least per the patentability of the independent claims from which they depend.

Additionally, Applicants submit that various ones of the dependent claims are separately patentable and, for the sake of brevity in this communication, will reserve the right to present such arguments in future communications if necessary.

CONCLUSION

As all of the claims are now in condition for allowance, Applicants respectfully request allowance of the claims and passing of the application to issue in due course. Applicants urge the Examiner to contact Applicants' undersigned representative at (919) 854-1400 to resolve any remaining formal issues.
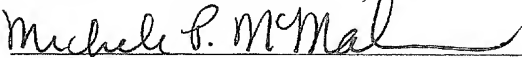
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Michele P. McMahan
Date of Signature: November 13, 2006